Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form

Section 1. General administrative information

Securing Wildlife Mitigation Sites-Oregon, Mitchell Point

Bonneville project number, if an ongoing project 9705909

Business name of agency, institution or organization requesting funding
Oregon Department of Fish and Wildlife

Business acronym (if appropriate) ODFW

Proposal contact person or principal investigator:

Name	Gregory B. Sieglitz
Mailing Address	7118 NE Vandenberg Ave.
City, ST Zip	Corvallis, OR 97330
Phone	541-757-4186
Fax	541-747-4252
Email address	greg.b.sieglitz

Subcontractors. List one subcontractor per row; to add more rows, press Alt-Insert from within this table
COOPERATORS AND SUBCONTRACTORS

Organization	Mailing Address	City, ST Zip	Contact Name
The Trust for Public Lands	1211 SW Sixth Ave.	Portland, OR 97204	Geoff Roach
U.S. Forest Service	PO Box 3623	Portland, OR 97208	Columbia River Gorge Area staff
Columbia River Gorge Commission		Portland, OR 97208	Commission staff

NPPC Program Measure Number(s) which this project addresses.

11.3.A, 11.3.D

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

If the project type is "Watershed" (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

Oregon Trust Agreement (OTA) Planning Project, prepared by Oregon wildlife managers for BPA; BPA Wildlife Mitigation Program Final EIS; BPA Watershed Management Program Final EIS; Assessing OTA Planning Project Using GAP Analysis; prepared by ODFW for BPA; Status of the interior Columbia Basin: summary of scientific finding, USDA Forest Service; CTUIR Wildlife Mitigation Plan for the John Day and McNary Dams, Columbia River Basin; CTWSRO Integrated Resource Management Plan; ODFW District Wildlife Management Plans; Wy Kan Ush Me Wa Kush Wit, CRITFC.
See references and related projects sections.

Subbasin.

Lower Columbia-Mainstem Columbia River

Short description.

Continue protection of 80 acres of riparian, grassland, deciduous and evergreen forest and talus shrub land along the mainstem Columbia River

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
	Anadromous fish		Construction		Watershed
	Resident fish	X	O & M		Biodiversity/genetics
X	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate		Monitoring/eval.		Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement	X	Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9705900	Securing Wildlife Mitigation Sites-Oregon	Umbrella project, Provides project location, priority, and data tracking

		information (Planning/Implementation)
95-65	Assessing Oregon Trust Agreement Using GAP Analysis	Tool used to analyze and rank potential projects in the basin for implementation(Planning)
92-84	Oregon Trust Agreement Planning Project	Methods developed for assembling trust agreement and list of potential projects(Planning)

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Protect riparian, grassland, and talus shrub land community at Mitchell Point	a	Develop operations and maintenance plan
		b	Develop monitoring plan
2	Implement monitoring and operations and maintenance on property	a	Monitor the maintenance of wildlife habitat features

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	10/98	11/98	20
2	11/98	ongoing	80

Schedule constraints.

Delayed and inadequate funding to implement projects within the scheduled time periods
Severe weather conditions which could delay field activities
Unexpected difficulties with the negotiation efforts with landowners

Completion date.

Acquisition-FY 98, O&M-ongoing. Once the mitigation losses associated with the hydro-electric facilities have been fully mitigated for through the acquisition and enhancement of habitats the program will only require O&M funds to ensure habitat values as long as the hydro projects are in operation FWP 11.3C.1

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		
Fringe benefits		
Supplies, materials, non-expendable property		
Operations & maintenance		1,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs		
Subcontracts		
Other		
TOTAL		1,000

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	1,000	1,000	1,000	1,000
O&M as % of total	100	100	100	100

Section 6. Abstract

This project is one of many which are considered ongoing acquisition and enhancement activities funded through the Securing Wildlife Mitigation Sites - Oregon 9705900 project. The project description fully explains the history, scientific background, and methods used for all projects which fall under the umbrella project. This abstract describes the details of this site specific project.

The acquisition will protect approximately 80 acres of talus shrub land, riparian, and mixed deciduous and evergreen forested habitats along the mainstem Columbia River. This is one of only a few areas which are on-site and available for inclusion in the BPA mitigation program at this time. Project costs are minimal and could be reduced based on the needs identified through the management planning process. Work during FY 1998 on the site includes exploring reducing the potential acquisition costs through a number of financial options. The property may be donated to one of multiple agencies thus eliminating most acquisition costs. Through the cooperative efforts of the Trust for Public Lands, ODFW, the U.S. Forest Service, and the Columbia River Gorge Commission. The site is known or expected to provide habitat for all mitigation target species identified in the loss assessment documents for Bonneville dam and reservoir. These include great blue heron, Canada goose, spotted sandpiper, yellow warbler, black-capped chickadee, western meadowlark, and mink. Expected outcome is 100-150 HUs to be applied to BPA's habitat debt at Bonneville reservoir.

Section 7. Project description

a. Technical and/or scientific background.

1. Council program

The Council's Fish and Wildlife Program is very clear in stating that construction and operation of the federal Columbia Basin hydro power system is a cause of habitat loss for wildlife, and that it is Bonneville's responsibility to mitigate for those losses. The losses due to construction have been assessed, independently audited and verified (see report by Beak Consultants), and adopted into the Council program. These losses include losses of HU's for all major wildlife species at each hydro project, and have been prioritized by habitat types with target species. The Council wildlife program goal is to "fully mitigate for wildlife losses from hydro power in the Columbia River Basin." Specifically the program says "The goal of this program's wildlife strategy is to achieve and sustain levels of habitat and species productivity as a means of fully mitigating wildlife losses…" Acquisition of HU's is the Council's "preferred method" for wildlife mitigation. This can be done either by habitat acquisition via purchase or easement, or enhancement of existing habitat to provide additional HU's (if possible). The implementation component of this project consists of specific projects to provide HU's of the highest possible priority habitat type for target species, to provide crediting to Bonneville for documented hydro power losses.

In addition to the Council program, the assessments and calculations of wildlife losses mitigation credits are found in multiple documents written over a period of six years (Bedrossian et. al. 1985; Noyes et. al. 1985a, 1985b, 1985c, 1985d, 1986; Preston et. al. 1987; Rasmussen and Wright 1990a, 1990b, 1990c, 1990d).

The Council program is also very clear in calling for Bonneville to develop short-term interim five-year agreements with wildlife managers, specifically the state of Oregon and the appropriate Indian tribes. In the eyes of the OWC, this project, fully funded through 2001, will allow Bonneville to meet this goal. Additionally it will provide the framework to reach the Council's goal of Bonneville developing long-term agreements for all wildlife mitigation in Oregon.

2. The Oregon Trust Agreement Planning Project and the GAP analysis:

The BPA Oregon Trust Agreement Planning Project (OTAP) was initiated in 1992 by the OWC to create a list of potential wildlife mitigation opportunities by priority, and to attempt to determine the costs of mitigating wildlife losses in Oregon. The end result of this project was the "Brown Book", which identified 287 potential sites using Council and OWC developed criteria as a basis for determining priority (please see Methods section). This information originated from OWC project sponsors, various tribal and state management and mitigation plans, and the Oregon Natural Heritage Database. At the

time of completion these potential sites were “available”, and the OWC had developed cost estimates for general habitats within the mitigation area, based on estimates from certified appraisers. The findings of the “Brown Book”, and it’s corresponding database, lay somewhat dormant until 1995 (please see History).

Starting in 1995, at the request of Bonneville, the “Assessing Oregon Trust Agreement Planning Project Using GAP Analysis” project was conducted by the ODFW Wildlife Diversity Program. It was designed to assess the findings of the Brown Book, upgrade and provide more detailed information on the 287 previously identified sites (and to include any new sites that had since been identified), and to develop more refined methods to evaluate the project potential contribution to the mitigation of target species and habitat. Additionally, the role a project might play in conservation planning, within the range of habitat types and condition statewide, was determined. Specifically**,** the primary goal of this project was to prioritize and depict the contribution of each proposed mitigation site to target species and habitats as well as overall bio-diversity in the state and/or eco-region within which it is found. It is important to note that the primary objective of the mitigation program is to mitigate for habitats and species lost through construction. That objective is met and often exceeded when potential mitigation sites are selected using a GAP analysis.

The GAP project developed a series of databases and Geographic Information System (GIS) data layers, a tool used by the OWC to evaluate potential mitigation projects. Combined with the findings of the OTAP, a suitability analysis determined which projects were suitable for BPA mitigation now and which remaining projects could be implemented in the near future. Multiple queries of landscape level GIS data were conducted as part of the GAP analysis portion of the project. The results characterized the potential contribution to the mitigation target species and habitats. Future work by the OWC has and will involve the refinement of existing information and the generation of new projects based on criteria and methodology developed during this project.

Please see the Methods part of this section for specific information on GAP analysis and the criteria used and/or developed.

b. Proposal objectives.

1 Protect riparian, grassland, and talus shrub land community at Mitchell Point
- a Develop operations and maintenance plan
- b Develop monitoring plan

2 Implement monitoring and operations and maintenance on property
- a Monitor the maintenance of wildlife habitat features

Expected outcome is 100-150 HUs to be applied to BPA's habitat debt at Bonneville reservoir.

c. Rationale and significance to Regional Programs.

This project is consistent with all known local, state, federal, and tribal laws. The NWPPC has approved similar projects in Oregon and other states. BPA has successfully implemented several projects in Oregon in the last seven years. The project is covered under the BPA Wildlife and Watershed Programmatic EIS documents (BPA 1997b, BPA 1997c, BPA 1997a). The project is consistent with several areas of the Council's Fish and Wildlife Program. Specifically, it is consistent with Section 7.6 of the FWP which calls for watershed based habitat restoration focusing on protecting of wild and natural populations. It is also consistent with Section 11 of the Program which identifies wildlife resource needs. See project scientific/technical background and history sections.

d. Project history

The history of this project is two-fold: first is the history of Bonneville wildlife mitigation efforts, to give the reviewer an understanding of project structure and how it fits within the regional program. Second is the history of Oregon's efforts to work with Bonneville, the Council and the Wildlife Working Group (CBFWA Wildlife Caucus) to give the reviewer an understanding of how the project developed, current status and funding assumptions. This includes a history of the Oregon Trust Planning Project and GAP Analysis.

1. History of Bonneville Wildlife Mitigation Efforts
. History of Bonneville Wildlife Mitigation Efforts

Under the Northwest Power Act, the Council is required to include in its Fish and Wildlife Program measures to "protect, mitigate, and enhance" fish and wildlife affected by the development and operation of hydroelectric facilities on the Columbia River and its tributaries. Bonneville's Administrator is required to use his funds and authorities to carry out such mitigation in a manner consistent with the Council's Program.

Prior to 1988: At the Council's direction, Bonneville funded wildlife loss studies for construction of and inundation by the major hydroelectric dams. The first studies completed were those for Libby and Hungry Horse Dams. The Council reviewed the losses, amended its Program to specify the number of acres of habitat and species that would constitute adequate mitigation and authorized Bonneville to proceed with mitigation projects.

Rather than carry out the mitigation itself, Bonneville undertook negotiations with the State of Montana with the intent of having Montana undertake the mitigation. Because year-to-year contracts with Montana were not viewed as an administratively practical way of acquiring and maintaining habitat, the Council and the region's utilities encouraged Bonneville to consider establishing a trust fund, giving Montana flexibility to acquire and maintain habitat as the opportunity arose.

Bonneville was initially reluctant to consider trust funds because they felt such arrangements would give them inadequate control over the outcome of the mitigation. Bonneville eventually decided that a trust fund would be a good idea. In exchange, it could get the state to agree to: 1) a once-for-all-time settlement of Bonneville's wildlife obligation and; 2) to a hold harmless clause which would make the state liable for any additional mitigation which might be required by the Council or anyone else during the next 60 years.

Council position on wildlife agreements: Bonneville asked for the Council's response to this type of mitigation trust, and the Council replied in a July 14, 1987 letter from Chairman Bob Duncan. Basically the Council said that trusts are a good funding vehicle, but that once-for-all-time settlements were not in tune with either the Northwest Power Act or with FERC practice regarding mitigation at private hydroelectric facilities. This position was reiterated in subsequent amendments to the Program and is reflected in the current Council Program, where the Council endorses agreements (short-term (Section 11.3D and long-term Section 11.3E) as the preferred method for implementing wildlife mitigation.

Montana trust: During 1988, Bonneville negotiated with Montana to reach an agreement on a wildlife mitigation trust for Libby and Hungry Horse Dams. The Council was not invited to participate in these negotiations and was not briefed on them by Bonneville. Shortly before the end of the Governor's term, the state reached an agreement with Bonneville, including a once-for-all-time settlement, and hold harmless conditions.

Although the mitigation to be achieved under the agreement was based on the Council's Program, and the Program called for Bonneville funding of a Montana trust "upon approval by the Council", the Council was not asked to approve this agreement and did not do so. Given Montana's determination to enter into the agreement before the end of the Governor's term, the Council did not attempt to block the agreement but did send a letter on December 20 from Chairman Trulove to Bonneville expressing concern that the proposed trust agreement had not received a public airing or Council approval. The Council noted that the Montana Trust should not be considered a precedent for future wildlife mitigation.

Wildlife Rule: In November 1989, the Council took up wildlife mitigation for most of the remaining federal hydroelectric projects in the Columbia River basin. Because there was widespread disagreement about the loss estimates and the hydro power share of those losses, the Council did not make any determination about the total mitigation due at any of these projects. Instead, the Council amended the Program to include a wildlife mitigation goal of achieving 35% of the agency-submitted losses during the next decade, using the agency estimates as a "starting point".

The Wildlife Rule established a two-track process (including project specific criteria) for implementation of wildlife projects. One track called for projects to be submitted to

Bonneville under the Implementation Planning Process. Once projects are reviewed and selected for inclusion in the Bonneville Annual Implementation Workplan the Council's Wildlife Advisory Committee reviews them. The other track permits agreements if agreed to by all parties for a particular facility.

Dworshak trust: In 1990, the Nez Perce approached Bonneville about the possibility of an agreement for the Nez Perce portion of wildlife mitigation for Dworshak Dam. Following initial contacts with Bonneville, the tribe informed the Council and the state of Idaho of its decision to seek a settlement. At Bonneville's urging, the state and the tribe began working on a joint agreement and memorandum of understanding for the entire Dworshak project. Both parties worked with Council staff during this period and progress reports were made to the Council. Because of renewed interest expressed in agreements at this time Council Chairman Tom Trulove wrote to the Bonneville Administrator and other interested parties reiterating the Council's views on mitigation agreements (copy attached). In January 1991, the state and the tribe signed a memorandum of agreement delineating each party's share of the project and agreeing to negotiate jointly with Bonneville for an agreement. The parties negotiated extensively over the spring and summer, with a staff member from the Council present for the early discussions but excluded from the later discussions.

Once again, Bonneville insisted that the agreement be conditioned upon a once-for-all-time settlement and hold harmless agreement from the other parties. In this instance, Bonneville requested Council approval of the adequacy of the proposed mitigation (but not of the other terms of the agreement, such as the full settlement). Bonneville notified the Council that it needed advice from the Council at the Council's February 26, 1992 working session so that it could meet a March closing date for a key parcel involved in the settlement, the Pene Lands. Because of the short time, the Council again was unable to provide adequate opportunity for public comment on the proposed agreement. The Council notified Bonneville that, based on the information available from the parties, the mitigation was likely to succeed and would satisfy Bonneville's wildlife obligation. However, the Council advised Bonneville that an amendment to the Program was needed, and that the Council would be required to give full consideration to comments received in the amendment proceedings before making a final decision on the amendment.

Conforth Ranch: In June 1991, the Council approved Bonneville implementation of the Conforth Ranch wildlife mitigation project. Because of concerns over the project by the Port of Umatilla, the Council instructed Bonneville to work with the Port to address the Port's concerns while proceeding with acquisition of the property. After several months of negotiating with the Port, (no agreement was reached) Bonneville announced its intent to acquire the Conforth property in early December 1991. Following the Bonneville announcement, Senator Packwood and Representative Bob Smith of Oregon, wrote the Secretary of Energy requesting that he overturn the Bonneville decision to acquire the ranch because of local opposition to the project. After meeting with the parties, the Bonneville Administrator announced that his decision to acquire the Conforth property

was being put on hold for 45 days in order continue discussions with the parties and to consider other alternatives.

On February 12, 1992 the Administrator announced his decision on the Conforth project in a letter to Chairman Hallock. Bonneville's decision was to purchase a one year option on the Conforth Ranch from the Trust for Public Lands. The letter also stated that it was Bonneville's decision to meet its responsibilities for wildlife mitigation "through long-term trust agreements with States, tribes, and other agencies." Though it was not clear in the letter what the extent of the policy was, Bonneville has since clarified that its intent is to do no more wildlife mitigation absent trust agreements. Discussions with Bonneville staff indicate that this policy will apply to previously Council approved projects as well as to new projects.

Washington Interim Trust and Council rule-making to amend wildlife rule: In 1993 Washington and BPA signed an interim five year agreement. The agreement guarantees $45 million Washington's wildlife managers over a five year period. This was not a trust agreement, only a stream of funds. The Washington coalition and BPA agree to continue to negotiate for a long-term agreement. During this time the Council issued a draft rule which endorsed agreements as a preferred method to achieve wildlife mitigation and calls on BPA to enter into short term agreements, similar to the Washington agreement, with Oregon and Idaho and to negotiate long term agreements over the next 3 years. Bonneville states in comments on draft rule that it will not enter into short-term agreements. Bonneville then announces that its FY 94 and FY95 budgets contain no funds for new wildlife projects, including implementation of activities called for in Phase 4 of the draft wildlife rule.

The Council adopted the final rule in November 1993. The rule continued to call for short-term (Section 11.3D) agreements and states that if Bonneville cannot enter into such agreements in 90 days then the Council will solicit projects from the agencies and tribes and approve them for implementation. If short-term agreements are not in place thereafter the Council will call for project proposals each October thereafter; long term agreements are to be in place in 3 years. Bonneville failed to enter into short-term agreements with states and tribes and Council solicited project proposals in late February, 1994.

Since 1994 Bonneville has funded only a few new, individual wildlife mitigation projects outside the above agreements. This was due to the agreements using most or all of the available funds and a lack of any stable commitment from Bonneville to fund wildlife mitigation. In August of 1995 the Council completed a Wildlife & Resident Fish rule-making that included an amendment to establish specific funding percentages for Bonneville's Direct Program budget under the MOA: 70% for anadromous fish and 15% each for Resident Fish and Wildlife. Thus from FY96 through FY01 the region's wildlife managers have or will have approximately $15M per year (plus interest) for wildlife mitigation. While most of the available funds through FY98 will be used finishing up the Washington Interim Agreement, some funds have been available for use on other

individual projects, notably the Chief Joseph and Southern Idaho projects. Unfortunately, in the history of Bonneville wildlife mitigation under the Council's program, little of Oregon's losses has been mitigated.

2. Oregon Wildlife Coalition

In 1991 the Oregon Wildlife Coalition (OWC) was formed made up of wildlife managers from the Oregon Department of Fish & Wildlife (ODFW), the Confederated Tribes of the Warm Springs Reservation in Oregon (CTWSRO), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), the Burns-Paiute Tribe (BPT), and the US Fish and Wildlife Service (USFWS). The Coalition developed proposals to address Bonneville concerns for having an "outcomes" based approach and then submitted a proposal for an Oregon planning process to the Council later that year. From fall of 1991 to June of 1992 the OWC negotiated with Bonneville over funding the proposal, which in July of 1992 became the Oregon Trust Agreement (OTA) Planning Project (BPA #92-84).

In October of 1993, after a year of development the OWC publishes an Oregon planning document, the "Brown Book". Then in January of 1994 they begin meeting to formulate a strategy for trust negotiations with Bonneville and in February the Coalition requests in writing that Bonneville begin negotiations. This met the Council's deadline for trying to get to interim agreements within 90 days after the rule went into effect. In March Bonneville responded positively and identifies its' lead negotiators.

Between April and July five coalition sessions were held; Bonneville attended 3 of those meetings. At the initial meeting it was agreed that the parties would develop principles of negotiation. The parties exchanged documents on these issues and agreed that the negotiations should initially focus on technical issues that would define the biological basis for mitigation before the issue of money was to be discussed. Bonneville negotiators agreed to this strategy. It was agreed that the focus of the discussions would be the "Brown Book" losses and the Oregon mitigation planning proposal. It was proposed that a technical committee, including both Bonneville staff and coalition members would work together to develop the technical proposal. Bonneville stated that they would have to get the administrators concurrence before they could commit to such a procedure. The process then broke down when it became apparent that no funds would be available and that Bonneville was moving away from trusts. The coalition stopped meeting for over a year.

During these years the Council's wildlife advisory group had become the Wildlife Working Group (WWG, and also the CBFWA Wildlife Caucus), made up of all the wildlife managers in the Columbia Basin. They meet regularly to help implement the Council's wildlife rule and in doing so developed, reviewed and adopted habitat assessment tools and strategies. Once it became apparent from the Council's 1995 rule-making and the MOA negotiations that wildlife funding would become stable at approximately $15M per year through 2001, the WWG started discussions of both long-

and short-term funding for future wildlife mitigation in the Basin. Various strategies were discussed, but all agreed that Oregon had not received a reasonable share of funds spent to date. In the end a budget was developed and adopted by the WWG covering Bonneville funds through 2001 (attached). This budget called for Oregon's wildlife mitigation to receive $275K in FY97, $500K in FY98, $4M in FY99, $5M in FY00 and $6M in FY01. The first two years are for planning and coordination, the next three for project implementation.

In helping develop this budget as members of the WWG, Oregon's coalition members agreed to come together once again to start developing strategies on how best to implement wildlife mitigation in Oregon. Also at this time a project to reaffirm the original findings of the OTA Planning Project was completed. This project, Assessing Oregon Trust Agreement Planning Process Using GAP Analysis (BPA #95-65), provided a more rigorous scientific/policy filter on the sites originally identified in the "Brown Book" and demonstrated the validity and applicability of that effort.

The OWC has met continually since this time and developed a coordination and planning budget for FY97, which due to contracting problems was not initiated until fall of 1997. This allowed the entities involved to provide staff dedicated to this planning and implementation effort. For FY98, since much of the coordination for this year was using FY97 funds, the coalition developed and proposed the initiation of a small group of projects scattered throughout the state along with some continued funding of planning and coordination. For the current year specific implementation project areas have been identified for acquisition, enhancement or O&M along with a small coordination budget.

e. Methods.

1. For selecting implementation projects:

OTAP: The OTAP consisted of two parts. The first was the compilation of a database which contained information about potential mitigation sites. The second component of the OTAP consisted of gathering land values from recent land sales and appraisals within the geographic areas and habitat types where mitigation activities were likely to occur. The information originated from OWC project sponsors, various tribal and state management and mitigation plans, and the Oregon Natural Heritage Database. A range of potential acquisition costs was also calculated. This range was based upon the assumption of complete mitigation for the wildlife losses in Oregon.

Criteria developed by the Council, as well as by the OWC are used to evaluate each site to determine a baseline mitigation potential. Please see the Brown Book for further detail regarding these criteria.

ASSESSING OTAP: The primary goal of the project was to prioritize and depict the contribution of each proposed mitigation site identified in OTAP to target species and habitats as well as overall biodiversity in the state and/or ecoregion within which it is

found. It is important to note that the primary objective of the mitigation program is to mitigate for habitats and species lost through construction. That objective can be met and exceeded when potential mitigation sites are selected using a GAP analysis.

GAP Analysis: The National GAP Analysis Project began in 1988 with the states of Idaho and Oregon. It was coordinated by the USFWS from the Washington D.C. office (Scott and LaRoe 1993; Pennisi 1993). Today the U.S. Geological Survey spearheads the effort with over 200 collaborating organizations including businesses, universities, and local, state, and federal governments representing 32 states (Scott 1994).

One of the primary objectives of the project includes establishing ecological and social datasets, based on geographic location within each state, which will eventually lead to an analysis of the health and degree of "protectedness" of biodiversity in the United States (Scott et. Al. 1993; Machlis et. Al. 1994). Thus, the term GAP refers to the gaps in protection designed for the biological ecosystems upon which all life is dependent. The fundamental unit of analysis and protection is the vegetation or habitat type. The vegetation/habitat types are considered catalysts and therefore predictors of wildlife occurrence and in general, biodiversity itself.

The GAP project is considered a proactive rather than reactive form of focusing and directing land management activities. Traditional wildlife management has dealt with individual species and often only after the species has reached an elevated level of peril (Scott 1994). In many cases the management or protection comes only after the species has been designated as "at risk of extinction" (Forman and Gordon 1986; Harris 1984). Reactive management is costly, narrowly focused (often a single species), occurs relatively frequently, species in the same habitat type are dealt with separately (eg. spotted owl and marbled murrelet), and in some cases may occur too late (eg. Snake River sockeye salmon).

The information compiled and generated by the GAP Analysis program is intended to be used for the development of a biodiversity management plan. This approach also differs from historic management by considering common as well as rare species through the realization that all species are equally worthy of management and protection (Scott 1994). Rather than waiting for complex ecological, social, and economic problems, which may drive species near to extinction, GAP gathers the known information about communities and the nature of their protection before it is too late. This allows land managers to 1) assess the current land management situation, 2) identify important areas in need of further research, 3) develop and analyze management options, and 4) take steps towards insuring protection of biodiversity before additional species become threatened or endangered with extinction.

The BPA GAP Project adopted many of the techniques and objectives of the national program described above. New methods were also developed which may assist with similar activities in the future. It is hoped that through the use of these tools the BPA wildlife mitigation projects in Oregon will continue to be planned using the most current

scientific method available. And while providing necessary credits to BPA for the wildlife losses a robust network of protected areas will be dedicated to complement existing refugia for target species and others.

Review and develop criteria for prioritization of project sites: the first step towards developing prioritization criteria was to review the work which had been conducted for the OTAP. The previous project involved the formulation of a Joint Advisory Committee which decided to employ a "coarse filter/fine filter" approach using two sets of criteria. The first set was used as a coarse filter to "weed-out" some of the more than 500 potential project nominations. The second set of criteria was used to rank the remaining potential projects based on mitigative and biological qualities. The coarse filter criteria which were statutory or otherwise crucial consisted of the following:

1. Projects must be located within a pre-determined geographic area. A map showing the geographic limitations of consideration is included (*Figure 1*).
2. Projects must complement activities of regional, federal and state wildlife agencies, and tribes.
3. Project does not impose funding responsibilities of others on BPA.
4. Project does not adversely affect State or Federally listed Threatened or Endangered species.

The use of these criteria was effective at removing approximately half of the projects originally submitted. The remaining 287 projects were then ranked using the following fine filter criteria:

1. Directly mitigates impacts from hydro power development on-site. Score 0 or 1
   First consideration should be given to high quality on-site opportunities

2. Protect and/or enhance high priority habitat and indicator species as adopted by the Northwest Power Planning Council. Score 0 or 1.

3. Protect or enhance natural ecosystems and species diversity over the long term.
   Score: 1 = proposal addresses either naturally self-sustaining ecosystem or species diversity,
   2 = previously natural self-sustaining ecosystem that needs management actions to restore it to
   a natural self-sustaining ecosystem that will provide species diversity, and 3 = natural self-
   sustaining ecosystem that provides maximum species diversity.

4. Provides a direct benefit to State or Federal listed T&E, Federal and State Candidate, or sensitive animal species. Score 0 or 1

5. Provide habitat benefits to both wildlife and anadramous, State Sensitive, culturally significant, or T&E fish species. Score 0 or .5

During the review of the criteria and database products from the OTAP it became apparent that the previous project's strength was found in the use of existing BPA and NWPPC procedures. But, it lacked the use of current scientific methodology found in the fields of Conservation Biology and Landscape Ecology. To add those elements in this project, a series of OWC meetings was scheduled for the spring of 1996 after coordination with other conservation planning efforts (*Figure 2*) and a review of current literature pertaining to biodiversity conservation planning, GAP Analysis, and GIS techniques. A list of questions which would form the basis of project prioritization criteria was put together and discussed during the OWC meetings (*Appendix A*).

HEP:

2. To obtain HU's to provide mitigation credit to Bonneville: each specific implementation project will use HEP and various enhancement, restoration or management techniques to provide and/or maintain habitat units as contracted with Bonneville.

f. Facilities and equipment.

No new facilities are anticipated to be necessary at this time

g. References.

Bedrossian, K.L., J. H. Noyes and M.S. Potter. 1985. Wildlife and Wildlife Habitat Loss Assessment at Lookout Point Dam and Reservoir Project Middle Fork Willamette River, Oregon. Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 72pp.

Beschta, R. L., W.S. Platts, J. B. Kauffman, and M.T. Hill 1994. Artificial stream restoration--money well-spent or an expensive failure? Universities Council on Water Resources Annual Conference, Big Sky Montana, Carbondale, IL

BPA. 1993. Oregon Trust Agreement Planning Project: Potential Mitigation to the Impacts on Oregon Wildlife Resources Associated with Relevant Mainstem Columbia River and Willamette River Hydroelectric Projects. Bonneville Power Administration, U.S. Department of Energy, Portland, OR. DOE/BP-90299-1. 53pp plus Appendices.

BPA 1997a. Watershed Management Program Final Environmental Impact Statement. DOE/EIS - 0265. Bonneville Power Administration, Portland, OR

BPA 1997b. Wildlife Mitigation Program Final Environmental Impact Statement. DOE/EIS - 0246. Portland, OR

BPA 1997c. Wildlife Mitigation Program Record of Decision. DOE/EIS - 0246. Bonneville Power Administration, Portland, OR

Csuti, B., A.J. Kimerling, T.A. O'Neil, M.M. Shaughnessy, E. Gaines, M.M.P. Huso. 1997. *Atlas of Oregon Wildlife: distribution, habitat, and natural history*. Oregon State University Press, Corvallis, OR.

Forman, R.T. and M. Gordon. 1986. Landscape Ecology. John Wiley and Sons, New York.

Harris, L.D.. 1984. The Fragmented Forest: Island Biogeography Theory and the Preservation of Biotic Diversity. University of Chicago Press, Chicago, IL.

Interior, U. S. D. 1980. Habitat as a Basis for Environmental Assessment. ESM 101, Release 4-80. U. S. Fish and Wildlife Service, Division of Ecological Services, Washinton, D.C.

Kauffman, J. B., R.L. Beschta, N. Otting, and D. Lytjen. 1997. An ecological perspective of riparian and stream restroation in the western United States. *Fisheries* 22: 12-24.

Machlis, G., D. Forester, and J. McKendry. 1994. Gap analysis and the National Parks: adding the socioeconomic dimension. Park Science. National Park Service, U.S. Department of the Interior. 5pp.

Noyes, J.H., M.S. Potter and K.L. Bedrossian. 1985a. Wildlife and Wildlife Habitat Loss Assessment at Detroit and Big Cliff Dam and Reservoir Project North Santiam River, Oregon. Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 76pp.

Noyes, J.H., M.S. Potter and K.L. Bedrossian. 1985b. Wildlife and Wildlife Habitat Loss Asessment at Dexter Dam and Reservoir Project Middle Fork Willamette River, . Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 63pp.

Noyes, J.H., M.S. Potter and K.L. Bedrossian. 1985c. Wildlife and Wildlife Habitat Loss Assessment at Hills Creek Dam and Reservoir Project Middle Fork Willamette River, Oregon. Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 73pp.

Noyes, J.H., M.S. Potter and K.L. Bedrossian. 1985d. Wildlife and Wildlife Habitat Loss Assessment at Cougar Dam and Reservoir Project South Fork McKenzie River, Oregon.Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 71pp.

Noyes, J.H., M.S. Potter and K.L. Bedrossian. 1986. Wildlife and Wildlife Habitat Loss Assessment at Green Peter-Foster Project Middle Fork Santiam River, Oregon. Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 84pp.

NPPC 1994. Columbia River Basin Fish and Wildlife Program. NPPC 94-55. Northwest Power Planning Council, Portland, OR

ODFW 1997a. Assessing Oregon Trust Agreement Planning Project Using GAP Analysis. In fullfillment of Project Number 95-65, Contract Number DE-BI179-92BP90299. Prepared for: U.S. Bonneville Power Administration; Project Cooperators: U.S, Fish and Wildlife Service, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation, Burn Paiute Tribe, Oregon Natural Heritage Program, Portland, OR

Pennisi, E. 1993. Filling in the gaps. Science News, Vol 144. 4pp.

Preston, S., Noyes, J., and Potter, M. 1987. A wildlife habitat protection, mitigation, and enhancement plan for eight federal hydroelectric facilities in the Willamette River Basin.Prepared by Oregon Department of Fish and Wildlife for U.S. Department of Energy, Bonneville Power Administration, Portland, OR. 85pp plus Appendices.

Rasmussen, L. and P. Wright. 1990a. Wildlife impact assessment, Bonneville Project, Oregon and Washington. Prepared by U.S. Fish and Wildlife Service for U.S. Dept. Of Energy, Bonneville Power Administration, Portland, OR. 37pp.

Rasmussen, L. and P. Wright. 1990b. Wildlife impact assessment, McNary Project, Oregon and Washington. Prepared by U.S. Fish and Wildlife Service for U.S. Dept. Of Energy, Bonneville Power Administration, Portland, OR. 46pp.

Rasmussen, L. and P. Wright. 1990c. Wildlife impact assessment, John Day Project, Oregon and Washington. Prepared by U.S. Fish and Wildlife Service for U.S. Dept. Of Energy, Bonneville Power Administration, Portland, OR. 47pp.

Rasmussen, L. and P. Wright. 1990d. Wildlife impact assessment, The Dalles Project, Oregon and Washington. Prepared by U.S. Fish and Wildlife Service for U.S. Dept. Of Energy, Bonneville Power Administration, Portland, OR. 34pp.

Scott, M.J. and E. T. LaRoe. 1993. Status and directions of the Fish and Wildlife Service's Gap Analysis Program in 1993. Gap Analysis Bulletin No. 3. 2pp.

Scott, M.J., F. Davis, B. Csuti, R. Noss, B. Butterfield, C. Groves, H. Anderson, S. Caicco, F. D'Erchia, T. C. Edwards Jr., J. Ulliman, and R.G. Wright. 1993. Gap Analysis: a geographic approach to protection of biological diversity. Wildlife Monograph no. 123. 41 pp.

Scott, M.J. 1994. Preface. National Biological Survey Gap Analysis Program Handbook, University of Idaho, Moscow, ID., 3pp.

USDA 1996. Status of the interior Columbia basin: summary of scientific finding. General Technical Report PNW-GTR-385. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR

Section 8. Relationships to other projects

The Oregon Trust Agreement Planning Project 92-84, Assessing Oregon Trust Agreement Using GAP Analysis 95-65, and Securing Wildlife Mitigation Sites-Oregon 9705900 are the pre-planning and planning projects upon which the identification and selection of mitigation projects in the Willamette basin and other Columbia tributary basin are based.

Section 9. Key personnel

Susan Barnes, ODFW, Columbia Basin Mitigation Coordinator, Portland Oregon
Resume available upon request.

Jim Torland, ODFW, District Wildlife Biologist, The Dalles, Oregon
Resume available upon request.

Section 10. Information/technology transfer

Any reports written will be distributed via BPA and the Internet.